Abstract

The invention relates to a method of estimating a nitrogen oxide mass stored in a catalytic nitrogen oxide trapping device (1) which comprises a catalytic phase and which is traversed by the exhaust gases (2) from the internal combustion engine (3) of a motor vehicle (4) comprising an electronic control unit (5). The inventive method consists in: discretising the geometry of the catalytic trapping device (1) into several (n) perfectly-stirred, successive individual reactors (6, 7); and combining a thermal model, which can be used to calculate the temperature variation of the catalytic phase of the catalytic trapping device (1) during the traversing movement of the exhaust gases, and an absorption model, which can be used at any moment to calculate the nitrogen oxide mass stored in the catalytic trapping device (1) on the basis of the characteristics of said device (1), the temperatures from the thermal model for each individual reactor and the exhaust gas mass flow from the engine (3).